UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

January 10, 2023

OFFICE OF
LAND AND EMERGENCY
MANAGEMENT

Ms. Amanda Garcia, Attorney
Ms. Stephanie Biggs, Attorney
Southern Environmental Law Center
1033 Demonbreun Street, Suite 205
Nashville, TN 37203

Dear Ms. Garcia and Ms. Biggs:

Thank you for your letter of September 22, 2022, to Administrator Regan regarding a request for an update on the Environmental Protection Agency's (EPA) review of the December 31, 2020, "Radionuclide Pollution Decision by former Administrator Andrew Wheeler" (Dispute Resolution Decision). The Department of Energy (DOE) responded to your public comment on this issue in the Responsiveness Summary section of the Record of Decision (ROD) selecting the construction of the Environmental Management Disposal Facility (EMDF) at the Oak Ridge Reservation (ORR) Superfund Site in Tennessee. With respect to the Dispute Resolution Decision, the Responsiveness Summary accurately states that:

> The proposed remedy for EMDF is being selected consistent with the "December 31, 2020 Radionuclide Pollution Decision issued by former EPA Administrator Andrew Wheeler." That decision is no longer under review. The approach for preliminary remediation goals and discharge limits was developed and agreed upon among the [ORR federal facility agreement)] FFA parties, including significant input and review from EPA Headquarters.
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> Responsiveness Summary at 3-453.

The Responsiveness Summary explains that the selected remedy is consistent with Comprehensive, Environmental Response, Compensation and Liability Act (CERCLA) and the National Contingency Plan (NCP):

> The selected remedy is consistent with CERCLA Sect. 121 and the threshold criteria described in the [NCP] for selecting a remedial action—overall protection of human health and the environment and compliance with applicable or relevant and appropriate requirements (ARARs). The selected remedy complies with federal and state ARARs as identified in the ROD, including ARARs from the Dispute Resolution Decision (EPA 2020).
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> Responsiveness Summary at 3-11.

The ROD further explains the basis for the radionuclides remedy:

> [The Dispute Resolution Decision] requires consideration of "*...site-specific information to evaluate exposure to radionuclides for the purpose of developing the PRGs for water discharged from CERCLA landfills to waterways at ORR to ensure that risk does not exceed the 10-5 level.*" That resolution decision established that the Tennessee and the EPA National Pollutant Discharge Elimination System (NPDES) regulations that pertain to water quality based effluent limitations and the Tennessee Water Quality Standards regulations establishing designated uses and criteria to protect those uses are relevant and appropriate requirements to the discharge of radionuclides in wastewater from EMDF.
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> In the summary section of the Dispute Resolution Decision, it was stated "*Consideration of site-specific factors will require site-specific information, including conducting a fish study to assess radionuclides in fish tissue and other media in Bear Creek, and evaluate fish consumption, exposure and risk assessment data, to help inform the development of [Preliminary Remedial Goals (PRGs)] for radionuclides at this site.*" The results of the fish tissue studies and development of the PRGs are included in the *Focused Feasibility Study for Water Management for the Disposal of CERCLA Waste on the Oak Ridge Reservation, Oak Ridge, Tennessee* (DOE 2022). Summary information also included a fact sheet provided as part of the additional public outreach activities (Sect. 2.10.9).
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> The FFA Parties have developed the following approach for PRGs/cleanup levels for the EMDF. Twenty-one radionuclides which bioaccumulate and have the potential to be present in landfill wastewater at some time during the operational life of the EMDF have been identified as radionuclides of interest. A recreational fisher in the recreational use scenario was identified as the appropriate exposure scenario. For the 21 radionuclides of interest, fish tissue and instream water column PRGs/cleanup levels have been developed to be protective of recreational use (human health), specifically fish ingestion. PRGs/cleanup levels have been established for the 21 radionuclides of interest, inclusive of relevant progeny, using EPA's PRG Calculator tool, based on a target of 10-5 [excess lifetime cancer risk (ELCR)], as specified in Tennessee's water quality criteria for recreational use. Exposure factors used to develop the PRGs/cleanup levels include:
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> - 17.5 g/day Fish Consumption Rate and 365 days/year Exposure Frequency (per EPA-approved methodology for deriving human health criteria)
> - 26 years Exposure Duration (per CERCLA guidance and consistent with site-specific factors)
> - Default Bioconcentration Factors used in EPA's PRG Calculator tool.
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> The 21 radionuclides of interest and corresponding fish tissue and instream water PRGs/cleanup levels are shown in Table 2.9. These values are included in the *Development of Fish Tissue and Surface Water Preliminary Remediation Goals*

for Radionuclides of Interest for the Proposed Environmental Management Disposal Facility, Oak Ridge, Tennessee (UCOR 2022), which is summarized in the *Focused Feasibility Study for Water Management for the Disposal of CERCLA Waste on the Oak Ridge Reservation, Oak Ridge, Tennessee* (DOE 2022); the PRGs were available for public comment (Sect. 2.10.9).

Results from 2021 field studies in Bear Creek were evaluated to help set in-stream PRGs/cleanup levels for the EMDF to ensure protectiveness for a hypothetical recreational fisherman. Although these field studies showed limited availability of harvestable fish, in-stream PRGs/cleanup levels were based on [Tennessee Department of Environment and Conservation (TDEC)] default fish harvesting and consumption rates (applicable to the most productive fisheries in Tennessee) and default EPA radioisotope biological concentration factors (bounding factors for all sizes and types of fish). Fish tissue measurements taken during these field studies also showed that ongoing discharges into Bear Creek, including discharges from the existing [Environmental Management Waste Management Facility (EMWMF)] disposal facility since 2002, are protective of fish and a recreational fisher even at the Tennessee 17.5 g/day default fish consumption rates. Levels of radioactivity observed in Bear Creek fish tissue samples were either non-detectable, or at levels that are similar to uncontaminated background locations.

Record of Decision at 2-66 – 2-68 (embedded table omitted).

The ROD also explains how the construction and management of the EMDF will protect water resources:

[T]he selected remedy includes the construction of EMDF in [Central Bear Creek Valley], providing up to 2.2 million [cubic yards] of additional disposal capacity for ORR CERCLA waste. EMDF will be designed and constructed to meet ARARs, including a liner and cap system compliant with [Resource Conservation and Recovery Act] requirements. Surface water and groundwater will be managed by diverting water around the facility and constructing a liner and geologic buffer system that will isolate the facility from groundwater. A leachate collection system and other support facilities, including a [landfill wastewater treatment systems], will also be designed and constructed as part of EMDF; final details will be included in a post-ROD [remedial design report], a primary document that requires approval by all three parties. Long-term monitoring and maintenance of EMDF to ensure the integrity of the facility and institutional controls to prevent access to waste in the future are also part of the selected remedy. While not ARARs under CERCLA, the remedy will also comply with all appropriate internal DOE Directives. Figure 2.6 presents a conceptual layout of the landfill and its supporting features. The footprint and supporting features could change during the design of the landfill.

. . .

> The selected remedy for the EMDF's landfill wastewater, defined as leachate and contaminated stormwater (i.e., contact water), for both radionuclides and non-radionuclides, is primary treatment of all wastewaters, with secondary treatment when required to meet cleanup goals. The primary wastewater treatment will be a flocculation and chemical precipitation process. Secondary wastewater treatment will be determined during the design phase and documented in a post-ROD FFA primary document. In the event that the selected remedy does not meet the identified protective goals for a pollutant, an [explanation of significant differences] or ROD amendment will be used to modify the remedy, such as changing the treatment approach or changing operational methods, so that the identified protective goals are met. When the EMDF effluent limits are calculated, the limits will be made available for public comment through either an ESD or ROD amendment.
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> Record of Decision at 2-45 – 2-46, 2-68.

Finally, the ROD provides that the selected remedy for radionuclides is protective:

> Cancer risk estimates were calculated for consumption of whole-body fish at the Bear Creek and Brushy Fork (background) points of exposure (POE). The cancer risk estimate at the Bear Creek POE was 3E-05 and at Brushy Fork was 1E-04. Therefore, the risk from consumption of whole fish (minus the entrails, fins, and scales) is less than background, within EPA's Risk Management Range, and is considered protective.
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> Responsiveness Summary at 3-366.

In summary, the selected remedy will ensure protection of human health and the environment.

Additional information related to the DOE EMDF ROD can be found at https://ucor.com/additional-emdf-information/. As information related to the EMDF becomes available, it will be posted at DOE's information center https://doeic.science.energy.gov/. EPA will continue to conduct oversight at ORR to ensure remedies selected and implemented are protective of human health and the environment. Thank you for your comments.

Sincerely,

Barry N. Breen
Acting Assistant Administrator